

TED-[15] 5013  
(REVISION-2015)

Reg. No:.....  
Signature.....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/  
COMMERCIAL PRACTICE – APRIL- 2018

**GEOTECHNICAL ENGINEERING**

[Maximum Marks: 100]

[Time: 3 Hours]

PART – A  
[Maximum Marks : 10]

Marks

I. Answer the following question in one or two sentences. Each question carries two marks

1. What is alluvial soil?
2. What is zero void line?
3. What is a thick wall sampler?
4. List the limitations of plate load test
5. State need of proportioning a rectangular footing? (5x2 = 10)

PART – B  
[Maximum Marks : 30]

II. Answer any five of the following questions. Each question carries six marks.

1. List out any five fields of application of soil mechanics
2. Explain the functional relationship between voids ratio and porosity
3. Derive an equation for coefficient of permeability by varying head test
4. Describe depth of exploration
5. Explain General and Local shear failure analysis
6. Explain any three types of foundations with sketch
7. Explain any three classifications of pile foundations with sketch (5x6=30)

PART – C  
[Maximum Marks : 60]

Answer one full question from each unit. Each full question carries 15 marks

UNIT - I

- III. a) Explain three phase system of soil (5)  
b) Explain the procedure for determining water content of soil by oven drying method (5)  
c) Explain the importance of soil engineering (5)

OR

- IV. a) Explain the procedure to determine the liquid limits of soil (5)  
b) Define the following  
1. Plastic limit 2. Shrinkage limit 3. Plasticity index 4. Void ratio  
5. Liquidity index (10)

UNIT - II

- V. a) Explain the procedure for modified proctor test of soil (7)  
b) State Darcys Law (3)  
c) List the factors affecting permeability of soil (5)

OR

- VI. a) Find the maximum dry density for a soil sample having specific gravity of 2.7 and OMC 16% (7)  
b) Explain the factors affecting compaction of soil (8)

UNIT - III

- VII. a) Differentiate between site investigation and sub soil exploration (5)  
b) Explain Electrical resistivity method of geophysical method (5)  
c) Explain soil samplers (5)

OR

- VIII. a) Describe Plate load test (10)  
b) Explain effects of water table on bearing capacity of soil (5)

UNIT - IV

- IX. a) Explain with sketch the components of a well foundation (10)  
b) What are the causes of failure of a foundation (5)

OR

- X. a) Explain the method of well sinking and correcting lifting (10)  
b) What are the different shapes of well foundations? Explain any two. (5)

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